Exhibit ALR-1

RESUME OF AARON L. ROTHSCHILD

SUMMARY

Financial professional providing expert rate of return testimony in utility (water, electric and gas) rate case proceedings, applied mathematics research for utility industry as an affiliate of the New England Complex Systems Institute, and industry experience includes Head of Business Analysis for a major US telecom firm in Asia Pacific.

EXPERIENCE

Rothschild Financial Consulting, Ridgefield, CT **November 2001- present**
Independent consulting firm specializing in utility sector
President

- Providing technical and expert witness services to the California Public Advocates Office to evaluate the financial health, basic operation, wildfire cost recovery and organizational culture/governance of gas and electric utilities (I.15-08-019), including evaluating alternatives to PG&E.
- Provide financial testimony (e.g. rate of return and M&A) to state governments in utility rate cases, including the 2020 California energy cost of capital proceedings.
- Present at utility regulation conferences (NARUC/NASUCA and MARC) regarding rate of return, power purchase agreements, complex systems science and subsidy auctions.
- Provided investment banking consulting services as an affiliate of Chapman, Spira & Carson, LLC.

360 Networks, **Hong Kong** **January 2001 - October 2001**
Pioneer of the fiber optic telecommunications industry
Senior Manager

- Business development and investment evaluation
- Negotiated landing rights and formed local partnerships in Korea, Japan, Singapore and Hong Kong for $1 billion undersea cable project
- Structured fiber optic bandwidth swapping agreement with Enron and Global Crossing
- Established relationships with Hong Kong based Investment Bankers to communicate Asia Pacific objectives and accomplishments to Wall Street

Dantis, **Chicago, IL** **July 2000- December 2000**
Start-up managed data-hosting services provider
Director

- Built capital raise valuation models and negotiated with potential investors
- Team raised $100M from venture capital firm through valuation negotiations and internal strategic analysis

MFS, MCI-WorldCom, Chicago, Hong Kong, Tokyo September 1996- July 2000
American Telecommunications Company
Head of Business Analysis for Japan operations

- Managed staff of 5 business development analysts
- Raised $80M internally for Japanese national fiber network expansion plan by conducting an investment evaluation and presenting findings to CEO of international operations in London, UK
- Built financial model for local fiber optic investment evaluation that was used by business development offices in Oak Brook, IL and Sydney, Australia

EDUCATION

Vanderbilt University, Nashville, TN 1994-1996
MBA, Finance

- Completed business plan for Nextlink Communications in support of their national fiber optic network expansion, including identifying opportunities from passage of Telecom Act of 1996
- Developed analytical framework to evaluate predictability of rare events
- Provided financial and accounting analysis to Chicago's consumer advocate, the Citizens Utility Board (CUB) as a summer intern

Clark University, **Worchester, MA**
1990 - 1994
BA, Mathematics

TESTIFYING EXPERIENCE OF AARON L. ROTHSCHILD

Through January 2020

CALIFORNIA

Southern California Edison, Application 19-04-014, Rate of Return, August 2019

Pacific Gas and Electric Company, Application 19-04-015, Rate of Return, August 2019

San Diego Gas & Electric Company, Application 19-04-017, Rate of Return, August 2019

Southern California Gas Company, Application 19-04-016, Rate of Return, August 2019

Great Oaks Water Company, Application A.18-05-001, Rate of Return, August 2018

Liberty Utilities, Application A.18-05-006, Rate of Return, August 2018

San Gabriel Water Company, Application A.18-05-005, Rate of Return, August 2018

Suburban Water Company, Application A.18-05-004, Rate of Return, August 2018

California American Water Company, Application A.17-04-003, Rate of Return, August 2017

California Water Service Company, Application A.17-04-006, Rate of Return, August 2017

Golden State Water Company, Application A.17-04-002, Rate of Return, August 2017

San Jose Water Company, Application A.17-04-001, Rate of Return, August 2017

COLORADO

Public Service Company of Colorado; Docket No. 11AL-947E, Rate of Return, March 2012

CONNECTICUT

United Water Connecticut; Docket No. 07-05-44, Rate of Return, November 2008

Valley Water Systems; Docket No. 06-10-07, Rate of Return, May 2007

DELAWARE

Tidewater Utilities, Inc.; PSC Docket No. 11-397, Rate of Return, April 2012

Delmarva Power & Light, PSC Docket No. 09-414, Rate of Return, February 2010

Delmarva Power & Light, PSC Docket No. 09-276T, Rate of Return, February 2010

FLORIDA

Florida Power & Light (FPL); Docket No. 070001-EI, October 2007

Florida Power Corp; Docket No. 060001 Fuel Clause, September 2007

NEW JERSEY

Aqua New Jersey, Inc.; BPU Docket No. WR11120859, Rate of Return, April 2012

MARYLAND

Potomac Electric Power Company; Case No. 9311, Rate of Return, 2013

Delmarva Power & Light; Case No. 9317, Rate of Return, June 2013

Columbia Gas of Maryland; Case No. 9316, Rate of Return, May 2013

Delmarva Power & Light; Case No. 9285, Rate of Return, March 2012

Potomac Electric Power Company; Case No. 9286, Rate of Return, March 2012

NORTH DAKOTA

Otter Tail Power Company; Case No. PU-17-398, Rate of Return, May 2018

Montana-Dakota Utilities Co; Case No. PU-15-90, Rate of Return, August 2015

Northern States Power; Case No. PU-400-04-578, Rate of Return, March 2005

PENNSYLVANIA

Twin Lakes Utilities, Inc., Docket No. R-2019-3010958, Rate of Return, October 2019

City of Lancaster Sewer Fund, Docket No. R-2019-3010955, Rate of Return, October 2019

Newtown Artesian Water Company, Docket No. R-20019-3006904, Rate of Return, May 2019

Community Utilities of Pennsylvania Inc. Water Division, Docket No. R-2019-3008947, Rate of Return, July 2019

Community Utilities of Pennsylvania Inc. Wastewater Division, Docket No. R-2019-3008948, Rate of Return, July 2019

Hidden Valley Utility Services, L.P. – Water; Docket No. R-2018-3001306, Rate of Return, September 2018

Hidden Valley Utility Services, L.P. – Wastewater Division; Docket No. R-2018-3001307, Rate of Return, September 2018

The York Water Company; Docket No. R-2018-3000019, Rate of Return, August 2018

SUEZ PA Pennsylvania, Inc.; Docket No. R-2018-000834, Rate of Return, July 2018

UGI Utilities, Inc. – Electric Division; Docket No. R-2017-2640058, Rate of Return, April 2018

Citizens' Electric Company of Lewisburg, Pa; Docket No. R-2016-2531550, Rate of Return, December 2016

Wellsboro Electric Company; Docket No. R-2016-2531551, Rate of Return, December 2016

Columbia Gas of Pennsylvania, Inc.; Docket No. R-2016-2529660, Rate of Return, June 2016

Columbia Gas of Pennsylvania, Inc.; Docket No. R-2015-2468056, Rate of Return, June 2015

Pike County Light & Power Company; Docket No. R-2013-2397237(electric), Rate of Return, April 2014

Pike County Light & Power Company; Docket No. R-2013-2397353 (gas), Rate of Return, April 2014

Columbia Water Company; Docket No. R-2013-2360798, Rate of Return, August 2013

Peoples TWP LLC; Docket No. R-2013-2355886, Rate of Return, July 2013

City of Dubois – Bureau of Water; Docket No. R-2013-2350509, Rate of Return, July 2013

City of Lancaster – Sewer Fund, Docket No. R-2012-2310366, Rate of Return, December 2012

Citizens' Electric Company of Lewisburg, Pa; Docket No. R-2010-2172662, Rate of Return, September 2010

Wellsboro Electric Company; Docket No. R-2010-2172665, Rate of Return, September 2010

York Water Company; Docket No. R-2010-2157140, Rate of Return, August 2010

T.W. Phillips Gas and Oil Company; Docket No. R-2010-2167797, Rate of Return, August 2010

Joint Application of The Peoples Natural Gas Company, Dominion Resources, Inc. and Peoples Hope Gas Company LLC, Docket No. A-2008-2063737, Financial Analysis, December 2008

York Water Company; Docket No. R-2008-2023067, Rate of Return, August 2008

SOUTH CAROLINA

Blue Granite Water Company, Docket No. 2019-290-WS, Rate of Return, January 2020

VERMONT

Central Vermont Public Service Corp., Docket No. 7321, Rate of Return, September 2007

EXHIBIT ALR-2

OVERALL COST OF CAPITAL
Palmetto Utilities, Inc.

	Ratios		Cost Rate		Weighted Cost Rate
					[D]
Debt	47.50%	[A]	5.89%	[B]	2.80%
Common Equity	52.50%	[A]	8.63%	[C]	4.53%
	100.00%				**7.33%**

Sources:
[A] Recommendation based on Proxy Group capital structures
[B] Mr. Walker's Direct Testimony, Schedule 1
[C] EXHIBIT ALR-3
[D] Ratios times Cost Rate

EXHIBIT ALR-3

COST OF EQUITY SUMMARY

Water Proxy Group (7 Companies)

		Low	High
DCF			
Constant Growth	[A]	8.17%	8.30%
Non-Constant Growth	[B]	5.40%	6.48%
CAPM			
Forward Spot			
3-Month Treasury Bill Risk-Free Rate	[C]	7.91%	9.08%
30-Year Treasury Bond Risk-Free Rate	[C]	8.42%	9.50%
Weighted			
3-Month Treasury Bill Risk-Free Rate	[D]	9.40%	10.32%
30-Year Treasury Bond Risk-Free Rate	[D]	9.88%	10.74%
Average		**8.20%**	**9.07%**
Proxy Group Average of Low / High Averages			**8.63%**

Palmetto Utilities, Inc.

		Capital Structure Risk Adjustment	Adjusted Cost of Equity
Company Specific Cost of Equity	[E]	0.00%	**8.63%**

Sources:
[A] EXHIBIT ALR-4, page 1
[B] EXHIBIT ALR-4, page 2 and EXHIBIT ALR-4, page 3
[C] EXHIBIT ALR-5, page 1
[D] EXHIBIT ALR-5, page 2
[E] Not applicable because of recommended Capital Structure within Proxy Group range.
Based on estimate of 0.04% change in Cost of Equity for each 1% difference in Common Equity Ratio compared to the Proxy Group (EXHIBIT ALR-2 vs EXHIBIT ALR-6, page 4).

CONSTANT GROWTH DISCOUNTED CASH FLOW (DCF) - INDICATED COST OF EQUITY
Water Proxy Group (7 Companies)

			Based on Average Market Price For Year Ending 4/28/2020	Based On Market Price As Of 4/28/2020
1	Dividend Yield On Market Price	[A]	1.82%	1.78%
2	Retention Rate:			
	a) Market-to-Book Ratio	[A]	3.40	3.37
	b) Dividend Yield on Book	[B]	6.20%	5.98%
	c) Expected Return on Equity	[C]	10.00%	10.00%
	d) Retention Rate	[D]	38.03%	40.18%
3	Reinvestment Growth	[E]	3.80%	4.02%
4	New Financing Growth	[F]	2.49%	2.45%
5	Total Estimate of Investor Anticipated Growth	[G]	6.29%	6.47%
6	Increment to Dividend Yield for Growth to Next Year	[H]	0.06%	0.06%
7	**Indicated Cost of Equity**	**[I]**	**8.17%**	**8.30%**

Sources:

[A] EXHIBIT ALR-6, page 1

[B] Line 1 x Line 2a

[C] Some of the considerations for determining Future Expected Return on Equity:

	Median	Mean	From
Value Line Expectation	**12.50%**	**12.21%**	EXHIBIT ALR-6, page 2
Return on Equity to Achieve Zacks Growth	7.23%	7.40%	EXHIBIT ALR-6, page 3
Earned Return on Equity in 2019	10.35%	9.68%	EXHIBIT ALR-6, page 2
Earned Return on Equity in 2018	10.07%	10.24%	EXHIBIT ALR-6, page 2
Earned Return on Equity in 2017	11.12%	11.20%	EXHIBIT ALR-6, page 2

[D] 1 - Line 2b / Line 2c

[E] Line 2c x Line 2d

[F] S x V = (Ext. Fin Rate) x (Line 2a - 1) Ext. Fin. Rate = 1.04% From EXHIBIT ALR-4, page 4

S = rate of continuous new stock financing

V = fraction of funds raised by sale of stock that increases the book value of existing shareholders' common equity

[G] Line 3 + Line 4

[H] Line 1 x one-half of Line 5

[I] Line 1 + Line 5 + Line 6

NON-CONSTANT GROWTH DISCOUNTED CASH FLOW (DCF) - INDICATED COST OF EQUITY
(BASED ON VALUE LINE FORECASTS AND CLOSING STOCK PRICE)
Water Proxy Group

		[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]	[10]	[11]	[12]	[13]	[14]	[15]	[16]
		Forecasted Dividends per Share					Growth	Book Value		Closing Stock Price		Cash Flow From Buying and Selling Stock (At Closing Price)					
		2020	2021	2022	2023	2024	2021-24	2020	2024	4/28/2020	4/28/2024	2020	2021	2022	2023	2024	IRR / DCF
		[A]	[A]	[B]	[B]	[A]	[B]	[A]	[A]	[C]	[D]	[E]	[E]	[E]	[E]	[E]	[F]
American States Water	AWR	$1.25	$1.35	$1.50	$1.67	$1.85	11.07%	$17.15	$21.35	$82.97	$106.71	($82.03)	$1.35	$1.50	$1.67	$107.17	8.20%
American Water Works Co.,	AWK	$2.10	$2.25	$2.45	$2.66	$2.90	8.83%	$35.35	$42.50	$126.52	$156.62	($124.95)	$2.25	$2.45	$2.66	$157.35	7.33%
Essential Utilities (Aqua Am	WTRG	$0.97	$1.05	$1.13	$1.21	$1.30	7.38%	$17.35	$19.55	$43.86	$48.99	($43.13)	$1.05	$1.13	$1.21	$49.31	5.32%
California Water Serv. Grp.	CWT	$0.82	$0.86	$0.92	$0.98	$1.05	6.88%	$15.70	$16.05	$49.73	$50.05	($49.12)	$0.86	$0.92	$0.98	$50.31	2.01%
Middlesex Water Company	MSEX	$1.04	$1.10	$1.15	$1.20	$1.25	4.35%	$16.15	$17.35	$60.50	$59.07	($59.72)	$1.10	$1.15	$1.20	$59.38	1.31%
York Water Company	YORW	$0.73	$0.78	$0.83	$0.89	$0.95	6.79%	$11.20	$12.50	$42.36	$49.90	($41.81)	$0.78	$0.83	$0.89	$50.14	6.08%
SJW Group	SJW	$1.28	$1.36	$1.43	$1.50	$1.58	5.13%	$33.30	$39.15	$59.78	$73.27	($58.82)	$1.36	$1.43	$1.50	$73.67	7.53%
Maximum		$2.10	$2.25	$2.45	$2.66	$2.90	11.07%	$35.35	$42.50	$126.52	$156.62	($41.81)	$2.25	$2.45	$2.66	$157.35	8.20%
Minimum		$0.73	$0.78	$0.83	$0.89	$0.95	4.35%	$11.20	$12.50	$42.36	$48.99	($124.95)	$0.78	$0.83	$0.89	$49.31	1.31%
Median		$1.04	$1.10	$1.15	$1.21	$1.30	6.88%	$17.15	$19.55	$59.78	$59.07	($58.82)	$1.10	$1.15	$1.21	$59.38	6.08%
Average		$1.17	$1.25	$1.34	$1.44	$1.55	7.20%	$20.89	$24.06	$66.53	$77.80	($65.65)	$1.25	$1.34	$1.44	$78.19	**5.40%**

Sources:
[A] Value Line: Most current data available at time of schedule preparation. 2024 data is VL forecast for 2023-25.
[B] Calculations based on Value Line data, assuming constant dividend growth for 2021-24.
[C] EOD Data: Market Data as of April 28, 2020.
[D] Stock Price projected assuming constant Market to Book Ratio (EXHIBIT ALR-6, page 1) and using VL projected Book Value.
[E] Cash Flow from purchasing stock on April 29, 2020, receiving dividends through 2024, and selling on April 28, 2024.
Negative number in 2020 reflects cash outflow required to purchase stock.
Cash flow sources are 1) dividends and 2) proceeds of stock sale.
3 of 4 dividends assumed received in 2020 and 1 of 4 in 2024 based on purchase and sale date.
[F] Total return on equity to investor who purchased, held, and sold stock as described above,
assuming Value Line projections of Dividends and Book Value are correct and
assuming Stock Price grows at same rate as Book Value.
DCF result is an Internal Rate of Return computation made using the "IRR" function built into Microsoft Excel
based on projected cash flows from 2020 to 2024.

NON-CONSTANT GROWTH DISCOUNTED CASH FLOW (DCF) - INDICATED COST OF EQUITY
(BASED ON VALUE LINE FORECASTS AND LTM AVERAGE STOCK PRICE)
Water Proxy Group

		[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]	[10]	[11]	[12]	[13]	[14]	[15]	[16]
		Forecasted Dividends per Share					Growth	Book Value		LTM Avg. Stock Price		Cash Flow From Buying and Selling Stock (At LTM Average Price)					
		2020	2021	2022	2023	2024	2021-24	2020	2024	4/28/2020	4/28/2024	2020	2021	2022	2023	2024	IRR / DCF
		[A]	[A]	[B]	[B]	[A]	[B]	[A]	[A]	[C]	[D]	[E]	[E]	[E]	[E]	[E]	[F]
American States Water	AWR	$1.25	$1.35	$1.50	$1.67	$1.85	11.07%	$17.15	$21.35	$80.88	$107.40	($79.94)	$1.35	$1.50	$1.67	$107.86	9.09%
American Water Works Co.,	AWK	$2.10	$2.25	$2.45	$2.66	$2.90	8.83%	$35.35	$42.50	$116.85	$147.80	($115.28)	$2.25	$2.45	$2.66	$148.52	8.05%
Essential Utilities (Aqua Am	WTRG	$0.97	$1.05	$1.13	$1.21	$1.30	7.38%	$17.35	$19.55	$42.46	$53.90	($41.73)	$1.05	$1.13	$1.21	$54.23	8.68%
California Water Serv. Grp.	CWT	$0.82	$0.86	$0.92	$0.98	$1.05	6.88%	$15.70	$16.05	$48.61	$49.66	($48.00)	$0.86	$0.92	$0.98	$49.93	2.42%
Middlesex Water Company	MSEX	$1.04	$1.10	$1.15	$1.20	$1.25	4.35%	$16.15	$17.35	$59.36	$60.52	($58.58)	$1.10	$1.15	$1.20	$60.84	2.42%
York Water Company	YORW	$0.73	$0.78	$0.83	$0.89	$0.95	6.79%	$11.20	$12.50	$41.46	$50.45	($40.91)	$0.78	$0.83	$0.89	$50.69	6.96%
SJW Group	SJW	$1.28	$1.36	$1.43	$1.50	$1.58	5.13%	$33.30	$39.15	$60.30	$74.66	($59.34)	$1.36	$1.43	$1.50	$75.05	7.77%
Maximum		$2.10	$2.25	$2.45	$2.66	$2.90	11.07%	$35.35	$42.50	$116.85	$147.80	($40.91)	$2.25	$2.45	$2.66	$148.52	9.09%
Minimum		$0.73	$0.78	$0.83	$0.89	$0.95	4.35%	$11.20	$12.50	$41.46	$49.66	($115.28)	$0.78	$0.83	$0.89	$49.93	2.42%
Median		$1.04	$1.10	$1.15	$1.21	$1.30	6.88%	$17.15	$19.55	$59.36	$60.52	($58.58)	$1.10	$1.15	$1.21	$60.84	7.77%
Average		$1.17	$1.25	$1.34	$1.44	$1.55	7.20%	$20.89	$24.06	$64.27	$77.77	($63.39)	$1.25	$1.34	$1.44	$78.16	**6.48%**

Sources:

[A] Value Line: Most current data available at time of schedule preparation. 2024 data is VL forecast for 2023-25.

[B] Calculations based on Value Line data, assuming constant dividend growth for 2021-24.

[C] EOD Data: Market Data as of April 28, 2020.

[D] Stock Price projected assuming constant Market to Book Ratio (EXHIBIT ALR-6, page 1) and using VL projected Book Value.

[E] Cash Flow from purchasing stock on April 29, 2020, receiving dividends through 2024, and selling on April 28, 2024.
Negative number in 2020 reflects cash outflow required to purchase stock.
Cash flow sources are 1) dividends and 2) proceeds of stock sale.
3 of 4 dividends assumed received in 2020 and 1 of 4 in 2024 based on purchase and sale date.

[F] Total return on equity to investor who purchased, held, and sold stock as described above,
assuming Value Line projections of Dividends and Book Value are correct and
assuming Stock Price grows at same rate as Book Value.
DCF result is an Internal Rate of Return computation made using the "IRR" function built into Microsoft Excel
based on projected cash flows from 2020 to 2024.

COMMON SHARES OUTSTANDING AND EXTERNAL FINANCING RATE
Water Proxy Group

		[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]	[10]	[11]
		Common Stock Outstanding (Millions of Shares)								Annual Growth Rate		
		2015	2016	2017	2018	2019	2020	2021	2024	2015-19	2019-24	2015-24
		[A]	[A]	[A]	[A]	[A]	[A]	[A]	[A]	[B]	[B]	[B]
American States Water	AWR	36.5	36.6	36.7	36.8	36.9	37.0	37.3	37.5	0.24%	0.35%	0.30%
American Water Works Co., Inc	AWK	178.3	178.1	178.4	180.7	180.8	181.0	182.0	189.0	0.35%	0.89%	0.65%
Essential Utilities (Aqua America)	WTRG	176.5	177.4	177.7	178.1	220.8	225.0	227.0	230.0	5.75%	0.82%	2.98%
California Water Serv. Grp.	CWT	47.9	48.0	48.0	48.1	48.5	50.0	51.0	53.0	0.34%	1.78%	1.14%
Middlesex Water Company	MSEX	16.2	16.3	16.4	16.4	17.4	17.7	17.8	18.0	1.81%	0.65%	1.16%
York Water Company	YORW	12.8	12.9	12.9	12.9	13.0	13.0	12.9	12.8	0.38%	-0.32%	-0.01%
SJW Group	SJW	20.4	20.5	20.5	28.4	28.5	29.0	29.5	30.0	8.71%	1.06%	4.39%
Maximum		178.3	178.1	178.4	180.7	220.8	225.0	227.0	230.0	8.71%	1.78%	4.39%
Minimum		12.8	12.9	12.9	12.9	13.0	13.0	12.9	12.8	0.24%	-0.32%	-0.01%
Median		36.5	36.6	36.7	36.8	36.9	37.0	37.3	37.5	0.38%	0.82%	1.14%
Average		69.8	69.9	70.1	71.6	78.0	78.9	79.6	81.5	2.51%	0.75%	1.52%
								Sustainable Growth	**[C]**			**1.04%**

Sources:
[A] Value Line: Most current data available at time of schedule preparation.
[B] Annualized Growth Rate calculation.
[C] Estimated Sustainable Growth in Common Stock based on average of historical and projected growth rates.
- Excludes SJW since 2015-24 growth rate is more than three times the median of the proxy group data.

CAPITAL ASSET PRICING MODEL (CAPM) - INDICATED COST OF EQUITY
(Assuming S&P Growth at 68.3% of Option-Implied Normal Distribution)
Water Proxy Group

	3-Month Treasury Bill		30-Year Treasury Bond	
	Hybrid Beta	Forward Beta	Hybrid Beta	Forward Beta
Risk Free Rate	0.11%	0.11%	1.20%	1.20%
Beta (Fwd Spot)	0.61	0.53	0.61	0.53
Risk Premium (Spot)	14.60%	14.60%	13.51%	13.51%
CAPM	9.08%	7.91%	9.50%	8.42%

CAPITAL ASSET PRICING MODEL (CAPM) - INDICATED COST OF EQUITY
(Assuming S&P Growth at 68.3% of Option-Implied Normal Distribution)
Water Proxy Group

	3-Month Treasury Bill		30-Year Treasury Bond	
	Hybrid Beta	Forward Beta	Hybrid Beta	Forward Beta
Risk Free Rate	0.11%	0.11%	1.20%	1.20%
Beta (Weighted)	0.61	0.56	0.61	0.56
Risk Premium (Weighted)	16.62%	16.62%	15.53%	15.53%
CAPM	10.32%	9.40%	10.74%	9.88%

CAPITAL ASSET PRICING MODEL (CAPM) - RISK FREE RATE

Risk Free Rate		
Current Yield on T-Bill	1.55%	
Historical Spread (T-Bond - T Bill)	0.19%	
Current (December 31, 2019)		
Short-Term (3-Month)	1.55%	[A]
Long-Term (30-Year)	2.39%	[A]
Historical (1926-2018)		
Short-Term (T-Bill)	3.30%	[B]
Long-Term (T-Bond)	5.50%	[C]
Short-Long Term Spread (1926-2018)	2.20%	[D]

Sources:

[A] www.treasury.gov

[B] 2019 SBBI Yearbook, Appendix C-6 Appendix C-1.

[C] Ibid. C-4.

[D] Short-Term - Long-Term Historical Returns

CAPITAL ASSET PRICING MODEL (CAPM) - RISK FREE RATE

Risk Free Rate		
Current Yield on T-Bill	1.53%	
Historical Spread (T-Bond - T Bill)	-0.40%	
Current (February 25, 2019)		
Short-Term (3-Month)	1.53%	[A]
Long-Term (30-Year)	1.80%	[A]
Historical (1926-2018)		
Short-Term (T-Bill)	3.30%	[B]
Long-Term (T-Bond)	5.50%	[C]
Short-Long Term Spread (1926-2018)	2.20%	[D]

Sources:

[A]	www.treasury.gov	
[B]	2019 SBBI Yearbook, Appendix C-6	Appendix C-1.
[C]	Ibid. C-4.	
[D]	Short-Term - Long-Term Historical Returns	

CAPITAL ASSET PRICING MODEL (CAPM) - RISK FREE RATE

Risk Free Rate		
Current Yield on T-Bill	0.19%	
Historical Spread (T-Bond - T Bill)	-0.57%	
Current (March 17, 2019)		
Short-Term (3-Month)	0.19%	[A]
Long-Term (30-Year)	1.63%	[A]
Historical (1926-2018)		
Short-Term (T-Bill)	3.30%	[B]
Long-Term (T-Bond)	5.50%	[C]
Short-Long Term Spread (1926-2018)	2.20%	[D]

Sources:

[A]	www.treasury.gov	
[B]	2019 SBBI Yearbook, Appendix C-6	Appendix C-1.
[C]	Ibid. C-4.	
[D]	Short-Term - Long-Term Historical Returns	

CAPITAL ASSET PRICING MODEL (CAPM) - RISK FREE RATE

Risk Free Rate		
Current Yield on T-Bill	0.14%	
Historical Spread (T-Bond - T Bill)	-0.88%	
Current (April 7, 2019)		
Short-Term (3-Month)	0.14%	[A]
Long-Term (30-Year)	1.32%	[A]
Historical (1926-2018)		
Short-Term (T-Bill)	3.30%	[B]
Long-Term (T-Bond)	5.50%	[C]
Short-Long Term Spread (1926-2018)	2.20%	[D]

Sources:

[A]	www.treasury.gov	
[B]	2019 SBBI Yearbook, Appendix C-6	Appendix C-1.
[C]	Ibid. C-4.	
[D]	Short-Term - Long-Term Historical Returns	

CAPITAL ASSET PRICING MODEL (CAPM) - RISK FREE RATE

Risk Free Rate		
Current Yield on T-Bill	0.11%	
Historical Spread (T-Bond - T Bill)	-1.00%	
Current (April 28, 2019)		
Short-Term (3-Month)	0.11%	[A]
Long-Term (30-Year)	1.20%	[A]
Historical (1926-2018)		
Short-Term (T-Bill)	3.30%	[B]
Long-Term (T-Bond)	5.50%	[C]
Short-Long Term Spread (1926-2018)	2.20%	[D]

Sources:

[A]	www.treasury.gov	
[B]	2019 SBBI Yearbook, Appendix C-6	Appendix C-1.
[C]	Ibid. C-4.	
[D]	Short-Term - Long-Term Historical Returns	

CAPITAL ASSET PRICING MODEL (CAPM) - RISK PREMIUM
(Assuming S&P Growth at 68.3% of Option-Implied Normal Distribution)

S&P 500 Growth	
S&P 500 (December 31, 2019)	$3,230.78
Implied Volatility (Annualized)	0.20
Days	365.0
Standard Deviation	636.3

		Growth Rate	Probability
			Percentage of Expected Distribution Less Than
S&P 500 Stock Price	$3,533.84	9.38%	68.3%

Implied Risk Premium	3-Month	30-Year
Risk Free Rate (Current Rates)	1.55%	2.39%
Dividend Yield	1.81%	1.81%
Market Return	11.19%	11.19%
Risk Premium	9.64%	8.80%

S&P 500 Implied Volatility

	Time to expiration - Years															
Time (Yrs)	**0.04**	**0.14**	**0.22**	**0.29**	**0.37**	**0.47**	**0.72**	**0.79**	**0.89**	**0.96**	**1.04**	**1.21**	**1.46**	**1.96**	**2.96**	**31 Month**
Implied Volatility	0.1358	0.1443	0.1567	0.1619	0.1663	0.1704	0.1778	0.1778	0.1828	0.1859	0.1813	0.1834	0.1869	0.1984	0.1961	0.1969

CAPITAL ASSET PRICING MODEL (CAPM) - RISK PREMIUM
(Assuming S&P Growth at 68.3% of Option-Implied Normal Distribution)

S&P 500 Growth	
S&P 500 (February 25, 2020)	$3,128.21
Implied Volatility (Annualized)	0.20
Days	365.0
Standard Deviation	633.8

		Growth Rate	Probability
			Percentage of Expected Distribution Less Than
S&P 500 Stock Price	$3,430.07	9.65%	68.3%

Implied Risk Premium	3-Month	30-Year
Risk Free Rate (Current Rates)	1.53%	1.80%
Dividend Yield	1.81%	1.81%
Market Return	11.46%	11.46%
Risk Premium	9.93%	9.66%

S&P 500 Implied Volatility

	Time to expiration - Years															
Time (Yrs)	**0.04**	**0.14**	**0.22**	**0.29**	**0.37**	**0.47**	**0.72**	**0.79**	**0.89**	**0.96**	**1.04**	**1.21**	**1.46**	**1.96**	**2.96**	**1-Year**
Implied Volatility	0.2897	0.2609	0.2466	0.2359	0.2269	0.2220	0.2212	0.2168	0.2178	0.2209	0.2112	0.2082	0.2051	0.2099	0.2005	0.2164

CAPITAL ASSET PRICING MODEL (CAPM) - RISK PREMIUM
(Assuming S&P Growth at 68.3% of Option-Implied Normal Distribution)

S&P 500 Growth	
S&P 500 (March 17, 2020)	$2,529.19
Implied Volatility (Annualized)	0.33
Days	365.0
Standard Deviation	841.4

		Growth Rate	Probability
			Percentage of Expected Distribution Less Than
S&P 500 Stock Price	$2,929.83	15.84%	68.3%

Implied Risk Premium

	3-Month	30-Year
Risk Free Rate (Current Rates)	0.19%	1.63%
Dividend Yield	1.81%	1.81%
Market Return	17.65%	17.65%
Risk Premium	17.46%	16.02%

S&P 500 Implied Volatility

	Time to expiration - Years															
Time (Yrs)	**0.01**	**0.08**	**0.16**	**0.26**	**0.33**	**0.43**	**0.50**	**0.58**	**0.68**	**0.75**	**0.83**	**1.00**	**1.25**	**1.75**	**2.75**	**1-Year**
Implied Volatility	1.1355	0.7385	0.6951	0.6526	0.6090	0.5721	0.5461	0.5236	0.5059	0.5063	0.4472	0.4225	0.3940	0.4067	0.3181	0.4229

CAPITAL ASSET PRICING MODEL (CAPM) - RISK PREMIUM
(Assuming S&P Growth at 68.3% of Option-Implied Normal Distribution)

S&P 500 Growth	
S&P 500 (April 7, 2020)	$2,659.41
Implied Volatility (Annualized)	0.29
Days	365.0
Standard Deviation	775.8

		Growth Rate	Probability
			Percentage of Expected Distribution Less Than
S&P 500 Stock Price	$3,028.78	13.89%	68.3%

Implied Risk Premium	3-Month	30-Year
Risk Free Rate (Current Rates)	0.14%	1.32%
Dividend Yield	1.81%	1.81%
Market Return	15.70%	15.70%
Risk Premium	15.56%	14.38%

CAPITAL ASSET PRICING MODEL (CAPM) - RISK PREMIUM - 31 MONTH SPOT
(Assuming S&P Growth at 68.3% of Option-Implied Normal Distribution)

S&P 500 Growth			
S&P 500 (April 28, 2020)	$2,863.39		
Implied Volatility (Annualized)	0.27		
Days	365.0		
Standard Deviation	776.8		
		Growth Rate	Probability
			Percentage of Expected Distribution Less Than
S&P 500 Stock Price	$3,232.75	12.90%	68.3%

Implied Risk Premium	3-Month	30-Year
Risk Free Rate (Current Rates)	0.11%	1.20%
Dividend Yield	1.81%	1.81%
Market Return	14.71%	14.71%
Risk Premium	14.60%	13.51%

CAPITAL ASSET PRICING MODEL (CAPM) - RISK PREMIUM - WEIGHTED
(Assuming S&P Growth at 68.3% of Option-Implied Normal Distribution)

S&P 500 Growth			
S&P 500 (April 28, 2020)	$2,863.39		
Implied Volatility (Annualized)	0.31		
Days	365.0		
Standard Deviation	898.3		
		Growth Rate	Probability
			Percentage of Expected Distribution Less Than
S&P 500 Stock Price	$3,290.52	14.92%	68.3%

Implied Risk Premium	3-Month	30-Year
Risk Free Rate (Current Rates)	0.11%	1.20%
Dividend Yield	1.81%	1.81%
Market Return	16.73%	16.73%
Risk Premium	16.62%	15.53%

CAPITAL ASSET PRICING MODEL (CAPM) - BETAS
(BASED ON HISTORICAL AND OPTION-IMPLIED RETURNS)
Water Proxy Group (excl. SJW)

Betas	10/01/2019	10/08/2019	10/15/2019	10/22/2019	10/29/2019	11/05/2019	11/12/2019	11/19/2019	11/26/2019	12/03/2019	12/10/2019	12/17/2019	12/24/2019	12/31/2019	Average	Time Avg.
Forward (6 months)	0.89	0.89	1.03	0.95	0.98	0.97	0.92	0.94	1.00	0.91	0.88	0.88	0.82	0.79	0.918	0.894
Historical (6 months)	0.44	0.47	0.43	0.42	0.35	0.38	0.37	0.37	0.36	0.38	0.39	0.39	0.37	0.37	0.392	0.382
Historical (2 yrs)	0.57	0.57	0.56	0.56	0.55	0.55	0.55	0.55	0.55	0.56	0.56	0.56	0.56	0.57	0.558	0.558
Historical (5 yrs)	0.66	0.67	0.66	0.66	0.66	0.65	0.65	0.65	0.65	0.64	0.63	0.63	0.62	0.62	0.647	0.639
Weighting																
Forward (6 months)	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%		
Historical (6 months)	25%	25%	25%	25%	25%	25%	25%	25%	25%	25%	25%	25%	25%	25%		
Historical (2 yrs)	15%	15%	15%	15%	15%	15%	15%	15%	15%	15%	15%	15%	15%	15%		
Historical (5 yrs)	10%	10%	10%	10%	10%	10%	10%	10%	10%	10%	10%	10%	10%	10%		
Hybrid Beta (Forward-Historical)	**0.71**	**0.71**	**0.77**	**0.73**	**0.73**	**0.73**	**0.70**	**0.71**	**0.74**	**0.70**	**0.68**	**0.69**	**0.65**	**0.63**	0.706	0.690
Slope	15%															
	100%	115%	132%	152%	175%	201%	231%	266%	306%	352%	405%	465%	535%	615%		
Time Weight	2.5%	2.8%	3.3%	3.8%	4.3%	5.0%	5.7%	6.6%	7.6%	8.7%	10.0%	11.5%	13.2%	15.2%		
CAPM Betas (October - December 2019)																
Forward	0.89															
Hybrid (Forward - Historical)	0.69															

CAPITAL ASSET PRICING MODEL (CAPM) - BETAS

(BASED ON HISTORICAL AND OPTION-IMPLIED RETURNS)

Water Proxy Group (excl. SJW)

Betas	**12/03/2019**	**12/10/2019**	**12/17/2019**	**12/24/2019**	**12/31/2019**	**01/07/2020**	**01/14/2020**	**01/21/2020**	**01/28/2020**	**02/04/2020**	**02/11/2020**	**02/18/2020**	**02/25/2020**	**Average**	**Time Avg.**
Forward (6 months)	0.91	0.88	0.88	0.82	0.79	0.82	0.95	0.91	0.70	0.69	0.58	0.87	0.65	0.804	0.768
Historical (6 months)	0.38	0.39	0.39	0.37	0.37	0.38	0.40	0.45	0.32	0.24	0.30	0.27	0.65	0.377	0.384
Historical (2 yrs)	0.56	0.56	0.56	0.56	0.57	0.57	0.57	0.57	0.55	0.54	0.55	0.55	0.60	0.561	0.562
Historical (5 yrs)	0.64	0.63	0.63	0.62	0.62	0.62	0.62	0.62	0.62	0.63	0.63	0.63	0.64	0.627	0.628
Weighting															
Forward (6 months)	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%		
Historical (6 months)	25%	25%	25%	25%	25%	25%	25%	25%	25%	25%	25%	25%	25%		
Historical (2 yrs)	15%	15%	15%	15%	15%	15%	15%	15%	15%	15%	15%	15%	15%		
Historical (5 yrs)	10%	10%	10%	10%	10%	10%	10%	10%	10%	10%	10%	10%	10%		
Hybrid Beta (Forward-Historical)	**0.70**	**0.68**	**0.69**	**0.65**	**0.63**	**0.65**	**0.72**	**0.71**	**0.58**	**0.55**	**0.51**	**0.65**	**0.64**	0.643	0.627
Slope	15%														
	100%	115%	132%	152%	175%	201%	231%	266%	306%	352%	405%	465%	535%		
Time Weight	2.9%	3.3%	3.8%	4.4%	5.1%	5.9%	6.7%	7.7%	8.9%	10.2%	11.8%	13.5%	15.6%		

CAPM Betas (December 2019 - February 2020)

Forward	0.77
Hybrid (Forward - Historical)	0.63

CAPITAL ASSET PRICING MODEL (CAPM) - BETAS
(BASED ON HISTORICAL AND OPTION-IMPLIED RETURNS)
Water Proxy Group (excl. SJW)

Betas	**12/17/2019**	**12/24/2019**	**12/31/2019**	**01/07/2020**	**01/14/2020**	**01/21/2020**	**01/28/2020**	**02/04/2020**	**02/11/2020**	**02/18/2020**	**02/25/2020**	**03/03/2020**	**03/10/2020**	**03/17/2020**	**Average**	**Time Avg.**
Forward (6 months)	0.88	0.82	0.79	0.82	0.95	0.91	0.70	0.69	0.58	0.87	0.65	0.68	0.98	0.61	0.781	0.758
Historical (6 months)	0.39	0.37	0.37	0.38	0.40	0.45	0.32	0.24	0.30	0.27	0.65	0.82	0.70	0.61	0.447	0.510
Historical (2 yrs)	0.56	0.56	0.57	0.57	0.57	0.57	0.55	0.54	0.55	0.55	0.60	0.62	0.60	0.58	0.569	0.575
Historical (5 yrs)	0.63	0.62	0.62	0.62	0.62	0.62	0.62	0.63	0.63	0.63	0.64	0.65	0.64	0.62	0.628	0.631
Weighting																
Forward (6 months)	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%		
Historical (6 months)	25%	25%	25%	25%	25%	25%	25%	25%	25%	25%	25%	25%	25%	25%		
Historical (2 yrs)	15%	15%	15%	15%	15%	15%	15%	15%	15%	15%	15%	15%	15%	15%		
Historical (5 yrs)	10%	10%	10%	10%	10%	10%	10%	10%	10%	10%	10%	10%	10%	10%		
Hybrid Beta (Forward-Historical)	**0.69**	**0.65**	**0.63**	**0.65**	**0.72**	**0.71**	**0.58**	**0.55**	**0.51**	**0.65**	**0.64**	**0.70**	**0.82**	**0.61**	0.651	0.656
Slope	15%															
	100%	115%	132%	152%	175%	201%	231%	266%	306%	352%	405%	465%	535%	615%		
Time Weight	2.5%	2.8%	3.3%	3.8%	4.3%	5.0%	5.7%	6.6%	7.6%	8.7%	10.0%	11.5%	13.2%	15.2%		

CAPM Betas (December 2019 - March 2020)

Forward	0.76
Hybrid (Forward - Historical)	0.66

CAPITAL ASSET PRICING MODEL (CAPM) - BETAS
(BASED ON HISTORICAL AND OPTION-IMPLIED RETURNS)
Water Proxy Group (excl. SJW)

Betas	**01/07/2020**	**01/14/2020**	**01/21/2020**	**01/28/2020**	**02/04/2020**	**02/11/2020**	**02/18/2020**	**02/25/2020**	**03/03/2020**	**03/10/2020**	**03/17/2020**	**03/24/2020**	**03/31/2020**	**04/07/2020**	**Average**	**Time Avg.**
Forward (6 months)	0.82	0.95	0.91	0.70	0.69	0.58	0.87	0.65	0.68	0.98	0.61	0.83	0.33	0.27	0.705	0.631
Historical (6 months)	0.38	0.40	0.45	0.32	0.24	0.30	0.27	0.65	0.82	0.70	0.61	0.67	0.74	0.72	0.518	0.598
Historical (2 yrs)	0.57	0.57	0.57	0.55	0.54	0.55	0.55	0.60	0.62	0.60	0.58	0.61	0.64	0.63	0.584	0.597
Historical (5 yrs)	0.62	0.62	0.62	0.62	0.63	0.63	0.63	0.64	0.65	0.64	0.62	0.64	0.66	0.65	0.634	0.640
Weighting																
Forward (6 months)	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%		
Historical (6 months)	25%	25%	25%	25%	25%	25%	25%	25%	25%	25%	25%	25%	25%	25%		
Historical (2 yrs)	15%	15%	15%	15%	15%	15%	15%	15%	15%	15%	15%	15%	15%	15%		
Historical (5 yrs)	10%	10%	10%	10%	10%	10%	10%	10%	10%	10%	10%	10%	10%	10%		
Hybrid Beta (Forward-Historical)	**0.65**	**0.72**	**0.71**	**0.58**	**0.55**	**0.51**	**0.65**	**0.64**	**0.70**	**0.82**	**0.61**	**0.74**	**0.51**	**0.47**	0.633	0.618
Slope	15%															
	100%	115%	132%	152%	175%	201%	231%	266%	306%	352%	405%	465%	535%	615%		
Time Weight	2.5%	2.8%	3.3%	3.8%	4.3%	5.0%	5.7%	6.6%	7.6%	8.7%	10.0%	11.5%	13.2%	15.2%		
CAPM Betas (January - April 2020)																
Forward	0.63															
Hybrid (Forward - Historical)	0.62															

CAPITAL ASSET PRICING MODEL (CAPM) - BETAS
(BASED ON HISTORICAL AND OPTION-IMPLIED RETURNS)
Water Proxy Group

Betas	**01/07/2020**	**01/14/2020**	**01/21/2020**	**01/28/2020**	**02/04/2020**	**02/11/2020**	**02/18/2020**	**02/25/2020**	**03/03/2020**	**03/10/2020**	**03/17/2020**	**03/24/2020**	**03/31/2020**	**04/07/2020**	**Average**	**Time Avg.**
Forward (6 months)	0.80	0.92	0.87	0.71	0.69	0.48	0.87	0.65	0.68	0.97	0.61	0.63	0.33	0.27	0.676	0.599
Historical (6 months)	0.39	0.40	0.45	0.32	0.24	0.30	0.27	0.65	0.82	0.70	0.60	0.67	0.73	0.72	0.519	0.597
Historical (2 yrs)	0.57	0.56	0.57	0.54	0.53	0.53	0.54	0.59	0.61	0.59	0.57	0.61	0.64	0.62	0.575	0.589
Historical (5 yrs)	0.61	0.61	0.62	0.62	0.62	0.62	0.62	0.64	0.65	0.64	0.62	0.64	0.66	0.65	0.631	0.637
Weighting																
Forward (6 months)	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%		
Historical (6 months)	25%	25%	25%	25%	25%	25%	25%	25%	25%	25%	25%	25%	25%	25%		
Historical (2 yrs)	15%	15%	15%	15%	15%	15%	15%	15%	15%	15%	15%	15%	15%	15%		
Historical (5 yrs)	10%	10%	10%	10%	10%	10%	10%	10%	10%	10%	10%	10%	10%	10%		
Hybrid Beta (Forward-Historical)	**0.64**	**0.71**	**0.70**	**0.58**	**0.55**	**0.46**	**0.64**	**0.64**	**0.70**	**0.81**	**0.60**	**0.64**	**0.51**	**0.47**	0.617	0.601
Slope	15%															
	100%	115%	132%	152%	175%	201%	231%	266%	306%	352%	405%	465%	535%	615%		
Time Weight	2.5%	2.8%	3.3%	3.8%	4.3%	5.0%	5.7%	6.6%	7.6%	8.7%	10.0%	11.5%	13.2%	15.2%		
CAPM Betas (January - April 2020)																
Forward	0.60															
Hybrid (Forward - Historical)	0.60															

CAPITAL ASSET PRICING MODEL (CAPM) - BETAS
(BASED ON HISTORICAL AND OPTION-IMPLIED RETURNS)
Water Proxy Group

Betas	**01/28/2020**	**02/04/2020**	**02/11/2020**	**02/18/2020**	**02/25/2020**	**03/03/2020**	**03/10/2020**	**03/17/2020**	**03/24/2020**	**03/31/2020**	**04/07/2020**	**04/14/2020**	**04/21/2020**	**04/28/2020**	**Average**	**Time Avg.**
Forward (6 months)	0.71	0.69	0.48	0.87	0.65	0.68	0.97	0.61	0.63	0.33	0.27	0.69	0.41	0.53	0.608	0.559
Historical (6 months)	0.32	0.24	0.30	0.27	0.65	0.82	0.70	0.60	0.67	0.73	0.72	0.80	0.84	0.84	0.607	0.699
Historical (2 yrs)	0.54	0.53	0.53	0.54	0.59	0.61	0.59	0.57	0.61	0.64	0.62	0.67	0.69	0.69	0.601	0.629
Historical (5 yrs)	0.62	0.62	0.62	0.62	0.64	0.65	0.64	0.62	0.64	0.66	0.65	0.68	0.69	0.69	0.645	0.657
Weighting																
Forward (6 months)	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%		
Historical (6 months)	25%	25%	25%	25%	25%	25%	25%	25%	25%	25%	25%	25%	25%	25%		
Historical (2 yrs)	15%	15%	15%	15%	15%	15%	15%	15%	15%	15%	15%	15%	15%	15%		
Historical (5 yrs)	10%	10%	10%	10%	10%	10%	10%	10%	10%	10%	10%	10%	10%	10%		
Hybrid Beta (Forward-Historical)	**0.58**	**0.55**	**0.46**	**0.64**	**0.64**	**0.70**	**0.81**	**0.60**	**0.64**	**0.51**	**0.47**	**0.71**	**0.59**	**0.65**	0.610	0.614
Slope	15%															
	100%	115%	132%	152%	175%	201%	231%	266%	306%	352%	405%	465%	535%	615%		
Time Weight	2.5%	2.8%	3.3%	3.8%	4.3%	5.0%	5.7%	6.6%	7.6%	8.7%	10.0%	11.5%	13.2%	15.2%		
CAPM Betas (January - April 2020)																
Forward	0.56															
Hybrid (Forward - Historical)	0.61															

MARKET TO BOOK RATIO AND DIVIDEND YIELD
Water Proxy Group

		[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]	[10]	[11]	[12]	[13]	[14]	[15]	[16]
		Book Value per Share															
		Actual				Estimated			Market Price			Mkt. to Book Ratio		Dividend Rate		Dividend Yield	
		12/31/16	12/31/17	12/31/18	12/31/19	4/28/19	4/28/20	12/31/20	4/28/20	LTM High	LTM Low	4/28/20	LTM Avg.	MRQ	Annual	4/28/20	LTM Avg.
		[A]	[A]	[A]	[A]	[B]	[B]	[A]	[C]	[C]	[C]	[D]	[D]	[A]	[E]	[F]	[F]
American States Water	AWR	$13.52	$14.45	$15.19	$16.33	$15.55	$16.60	$17.15	$82.97	$96.64	$65.11	5.00	5.03	$0.305	$1.220	1.47%	1.51%
American Water Works Co.,	AWK	$29.24	$30.13	$32.42	$33.83	$32.87	$34.33	$35.35	$126.52	$141.70	$92.00	3.69	3.48	$0.500	$2.000	1.58%	1.71%
Essential Utilities (Aqua Ame	WTRG	$10.43	$11.02	$11.28	$17.58	$13.30	$17.50	$17.35	$43.86	$54.52	$30.40	2.51	2.76	$0.234	$0.937	2.14%	2.21%
California Water Serv. Grp.	CWT	$13.75	$14.44	$15.19	$16.07	$15.47	$15.95	$15.70	$49.73	$57.48	$39.74	3.12	3.09	$0.213	$0.850	1.71%	1.75%
Middlesex Water Company	MSEX	$13.40	$14.02	$15.17	$18.57	$16.26	$17.77	$16.15	$60.50	$69.92	$48.79	3.40	3.49	$0.256	$1.025	1.69%	1.73%
York Water Company	YORW	$8.88	$9.28	$9.75	$10.32	$9.93	$10.61	$11.20	$42.36	$49.85	$33.06	3.99	4.04	$0.180	$0.721	1.70%	1.74%
SJW Group	SJW	$20.61	$22.57	$31.31	$31.27	$31.30	$31.94	$33.30	$59.78	$74.99	$45.60	1.87	1.91	$0.320	$1.280	2.14%	2.12%
Maximum		$29.24	$30.13	$32.42	$33.83	$32.87	$34.33	$35.35	$126.52	$141.70	$92.00	5.00	5.03	$0.500	$2.000	2.14%	2.21%
Minimum		$8.88	$9.28	$9.75	$10.32	$9.93	$10.61	$11.20	$42.36	$49.85	$30.40	1.87	1.91	$0.180	$0.721	1.47%	1.51%
Median		$13.52	$14.44	$15.19	$17.58	$15.55	$17.50	$17.15	$59.78	$69.92	$45.60	3.40	3.48	$0.256	$1.025	1.70%	1.74%
Average		$15.69	$16.56	$18.62	$20.57	$19.24	$20.67	$20.89	$66.53	$77.87	$50.67	3.37	3.40	$0.287	$1.148	1.78%	1.82%

Sources:
[A] Value Line: Most current data available at time of schedule preparation.
[B] Straight-line interpolation of Actual and Estimated VL year-end values.
[C] EOD Data: Market Data as of April 28, 2020.
[D] Market Price divided by Book Value per Share.
[E] Most Recent Quarterly Dividend multiplied by 4.
[F] Dividend Rate divided by Market Price.

EARNINGS PER SHARE AND RETURN ON EQUITY
Water Proxy Group

		[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]
		Earnings per Share				Return on Equity			
		2016	2017	2018	2019	2017	2018	2019	VL Future Exp.
		[A]	[A]	[A]	[A]	[B]	[B]	[B]	[A]
American States Water	AWR	$1.62	$1.88	$1.72	$2.28	13.44%	11.61%	14.47%	14.00%
American Water Works Co., Inc	AWK	$2.62	$2.38	$3.15	$3.43	8.02%	10.07%	10.35%	11.50%
Essential Utilities (Aqua America)	WTRG	$1.32	$1.35	$1.08	$1.05	12.59%	9.69%	7.28%	10.50%
California Water Serv. Grp.	CWT	$1.01	$1.40	$1.36	$1.31	9.93%	9.18%	8.38%	12.50%
Middlesex Water Company	MSEX	$1.38	$1.38	$1.96	$2.01	10.07%	13.43%	11.91%	14.50%
York Water Company	YORW	$0.92	$1.01	$1.04	$1.11	11.12%	10.93%	11.06%	13.00%
SJW Group	SJW	$2.57	$2.86	$1.82	$1.35	13.25%	6.76%	4.31%	9.50%
Maximum		$2.62	$2.86	$3.15	$3.43	13.44%	13.43%	14.47%	14.50%
Minimum		$0.92	$1.01	$1.04	$1.05	8.02%	6.76%	4.31%	9.50%
Median		$1.38	$1.40	$1.72	$1.35	11.12%	10.07%	10.35%	12.50%
Average		$1.63	$1.75	$1.73	$1.79	11.20%	10.24%	9.68%	12.21%

Sources:
[A] Value Line: Most current data available at time of schedule preparation.
[B] Earnings per Share divded by average Book Value. Book Values shown on EXHIBIT ALR-6, page 1.

RETURN ON EQUITY IMPLIED BY ZACKS GROWTH RATES

Water Proxy Group

		[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]	[10]	[11]	[12]	[13]
				Annual	Analyst	Analyst-Implied		Analyst-Implied		Implied	Analyst-			
		Book Value	EPS	Dividend	5 Year	Book Value before SV		Book Value Incl. SV		EPS	Implied	Common Stock Outstanding		Annual
		12/31/19	2019	Rate	Growth Rate	12/31/2023	12/31/2024	12/31/2023	12/31/2024	2024	ROE	2020	2024	Growth
		[A]	[A]	[A]	[B]	[C]	[C]	[C]	[C]	[C]	[C]	[A]	[A]	
American States Water	AWR	$16.33	$2.28	$1.220	ND	NA	NA	NA	NA	NA	NA	37.0	37.5	0.34%
American Water Works Co., Inc	AWK	$33.83	$3.43	$2.000	8.10%	$40.81	$42.92	$47.75	$52.23	$5.06	10.13%	181.0	189.0	1.09%
Essential Utilities (Aqua America)	WTRG	$17.58	$1.05	$0.937	5.90%	$18.10	$18.25	$19.12	$19.55	$1.40	7.23%	225.0	230.0	0.55%
California Water Serv. Grp.	CWT	$16.07	$1.31	$0.850	ND	NA	NA	NA	NA	NA	NA	50.0	53.0	1.47%
Middlesex Water Company	MSEX	$18.57	$2.01	$1.025	ND	NA	NA	NA	NA	NA	NA	17.7	18.0	0.49%
York Water Company	YORW	$10.32	$1.11	$0.721	ND	NA	NA	NA	NA	NA	NA	13.0	12.8	-0.29%
SJW Group	SJW	$31.27	$1.35	$1.280	4.00%	$31.58	$31.66	$33.64	$34.27	$1.64	4.84%	29.0	30.0	0.85%
Maximum		$33.83	$3.43	$2.000	8.10%	$40.81	$42.92	$47.75	$52.23	$5.06	10.13%	225.0	230.0	1.47%
Minimum		$10.32	$1.05	$0.721	4.00%	$18.10	$18.25	$19.12	$19.55	$1.40	4.84%	13.0	12.8	-0.29%
Median		$17.58	$1.35	$1.025	5.90%	$31.58	$31.66	$33.64	$34.27	$1.64	7.23%	37.0	37.5	0.55%
Average		$20.57	$1.79	$1.148	6.00%	$30.16	$30.94	$33.50	$35.35	$2.70	7.40%	78.9	81.5	0.64%

Sources:

[A] Value Line: Most current data available at time of schedule preparation.

[B] Zacks: Data as of April 30, 2020.

[C] Analyst-Implied Book Value and Return on Equity is obtained by escalating both Dividends and Earnings per Share by the stated Analyst Growth Rate and adding Earnings and subtracting Dividends for each projected year.

"SV" = S X V, where S = rate of continuous new stock financing and V = rate of return on common equity investment.

CAPITAL STRUCTURE WITH SHORT TERM DEBT (APRIL 2020)
Water Proxy Group

		[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]	[10]	[11]	[12]	[13]	[14]	[15]
		% Common Equity					($ millions)						Percentage			
		2015	2016	2017	2018	2019	Total Debt	LT Debt	ST Debt	Pfd Stock	Equity	Total Capital	LT Debt	ST Debt	Pfd Stock	Equity Ratio
		[A]	[A]	[A]	[A]	[A]	[A]	[A]	[A]	[A]	[A]	[A]	[B]	[B]	[B]	[B]
American States Water	AWR	58.9%	60.6%	62.0%	59.5%	55.6%	$ 286.3	$ 281.0	$ 5.3	$ -	$ 351.9	$ 638.2	44.0%	0.8%	0.0%	55.1%
American Water Works Co., I	AWK	46.2%	47.5%	45.3%	43.6%	41.4%	$ 9,453.0	$ 8,639.0	$ 814.0	$ 5.0	$ 6,106.9	$ 15,564.9	55.5%	5.2%	0.0%	39.2%
Essential Utilities (Aqua Amer	WTRG	49.7%	51.6%	49.4%	45.6%	56.9%	$ 3,074.1	$ 2,943.3	$ 130.8	$ -	$ 3,885.7	$ 6,959.8	42.3%	1.9%	0.0%	55.8%
California Water Serv. Grp.	CWT	55.6%	55.4%	57.3%	50.7%	49.8%	$ 983.8	$ 786.8	$ 197.0	$ -	$ 780.5	$ 1,764.3	44.6%	11.2%	0.0%	44.2%
Middlesex Water Company	MSEX	59.8%	61.5%	61.8%	61.6%	58.2%	$ 258.0	$ 230.8	$ 27.2	$ 2.4	$ 324.7	$ 585.1	39.4%	4.6%	0.4%	55.5%
York Water Company	YORW	55.6%	57.4%	57.0%	57.5%	58.7%	$ 101.0	$ 94.5	$ 6.5	$ -	$ 134.3	$ 235.3	40.2%	2.8%	0.0%	57.1%
SJW Group	SJW	50.2%	49.3%	51.8%	67.3%	41.0%	$ 1,305.9	$ 1,283.6	$ 22.3	$ -	$ 892.0	$ 2,197.9	58.4%	1.0%	0.0%	40.6%
Maximum		59.8%	61.5%	62.0%	67.3%	58.7%	$ 9,453.0	$ 8,639.0	$ 814.0	$ 5.0	$ 6,106.9	$ 15,564.9	58.4%	11.2%	0.4%	57.1%
Minimum		46.2%	47.5%	45.3%	43.6%	41.0%	$ 101.0	$ 94.5	$ 5.3	$ -	$ 134.3	$ 235.3	39.4%	0.8%	0.0%	39.2%
Median		55.6%	55.4%	57.0%	57.5%	55.6%	$ 983.8	$ 786.8	$ 27.2	$ -	$ 780.5	$ 1,764.3	44.0%	2.8%	0.0%	55.1%
Average		53.7%	54.8%	54.9%	55.1%	51.7%	$ 2,208.9	$ 2,037.0	$ 171.9	$ 1.1	$ 1,782.3	$ 3,992.2	46.3%	3.9%	0.1%	**49.7%**

Sources:
[A] Value Line: Most current data available at time of schedule preparation.
[B] Percentage calculated on Total Capital including Short Term Debt.

CAPITAL STRUCTURE WITHOUT SHORT TERM DEBT (APRIL 2020)
Water Proxy Group

		[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]	[10]	[11]	[12]	[13]	[14]	[15]
		% Common Equity					($ millions)						Percentage			
		2015	2016	2017	2018	2019	Total Debt	LT Debt	ST Debt	Pfd Stock	Equity	Total Capital	LT Debt	ST Debt	Pfd Stock	Equity Ratio
		[A]	[A]	[A]	[A]	[A]	[A]	[A]	[B]	[A]	[A]	[A]	[B]	[B]	[B]	[B]
American States Water	AWR	58.9%	60.6%	62.0%	59.5%	55.6%	$ 286.3	$ 281.0		$ -	$ 351.9	$ 632.9	44.4%	0.0%	0.0%	55.6%
American Water Works Co., Ir	AWK	46.2%	47.5%	45.3%	43.6%	41.4%	$ 9,453.0	$ 8,639.0		$ 5.0	$ 6,106.9	$ 14,750.9	58.6%	0.0%	0.0%	41.4%
Essential Utilities (Aqua Ameri	WTRG	49.7%	51.6%	49.4%	45.6%	56.9%	$ 3,074.1	$ 2,943.3		$ -	$ 3,885.7	$ 6,829.0	43.1%	0.0%	0.0%	56.9%
California Water Serv. Grp.	CWT	55.6%	55.4%	57.3%	50.7%	49.8%	$ 983.8	$ 786.8		$ -	$ 780.5	$ 1,567.3	50.2%	0.0%	0.0%	49.8%
Middlesex Water Company	MSEX	59.8%	61.5%	61.8%	61.6%	58.2%	$ 258.0	$ 230.8		$ 2.4	$ 324.7	$ 557.9	41.4%	0.0%	0.4%	58.2%
York Water Company	YORW	55.6%	57.4%	57.0%	57.5%	58.7%	$ 101.0	$ 94.5		$ -	$ 134.3	$ 228.8	41.3%	0.0%	0.0%	58.7%
SJW Group	SJW	50.2%	49.3%	51.8%	67.3%	41.0%	$ 1,305.9	$ 1,283.6		$ -	$ 892.0	$ 2,175.6	59.0%	0.0%	0.0%	41.0%
Maximum		59.8%	61.5%	62.0%	67.3%	58.7%	$ 9,453.0	$ 8,639.0		$ 5.0	$ 6,106.9	$ 14,750.9	59.0%	0.0%	0.4%	58.7%
Minimum		46.2%	47.5%	45.3%	43.6%	41.0%	$ 101.0	$ 94.5		$ -	$ 134.3	$ 228.8	41.3%	0.0%	0.0%	41.0%
Median		55.6%	55.4%	57.0%	57.5%	55.6%	$ 983.8	$ 786.8		$ -	$ 780.5	$ 1,567.3	44.4%	0.0%	0.0%	55.6%
Average		53.7%	54.8%	54.9%	55.1%	51.7%	$ 2,208.9	$ 2,037.0		$ 1.1	$ 1,782.3	$ 3,820.3	48.3%	0.0%	0.1%	**51.7%**

Sources:
[A] Value Line: Most current data available at time of schedule preparation.
[B] Percentage calculated on Total Capital excluding Short Term Debt.

CAPITAL STRUCTURE WITH SHORT TERM DEBT (JANUARY 2020)
Water Proxy Group

		[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]	[10]	[11]	[12]	[13]	[14]	[15]
		% Common Equity					($ millions)						Percentage			
		2015	2016	2017	2018	2019	Total Debt	LT Debt	ST Debt	Pfd Stock	Equity	Total Capital	LT Debt	ST Debt	Pfd Stock	Equity Ratio
		[A]	[A]	[A]	[A]	[A]	[A]	[A]	[A]	[A]	[A]	[A]	[B]	[B]	[B]	[B]
American States Water	AWR	58.9%	60.6%	62.0%	59.5%	56.0%	$ 475.3	$ 475.0	$ 0.3	$ -	$ 604.5	$ 1,079.8	44.0%	0.0%	0.0%	56.0%
American Water Works Co., I	AWK	46.2%	47.5%	45.3%	43.6%	42.0%	$ 9,143.0	$ 8,640.0	$ 503.0	$ 7.0	$ 6,261.6	$ 15,411.6	56.1%	3.3%	0.0%	40.6%
Essential Utilities (Aqua Amer	WTRG	49.7%	51.6%	49.4%	45.6%	57.5%	$ 3,086.4	$ 2,898.3	$ 188.1	$ -	$ 3,921.2	$ 7,007.6	41.4%	2.7%	0.0%	56.0%
California Water Serv. Grp.	CWT	55.6%	55.4%	57.3%	50.7%	49.0%	$ 967.9	$ 807.5	$ 160.4	$ -	$ 775.8	$ 1,743.7	46.3%	9.2%	0.0%	44.5%
Middlesex Water Company	MSEX	59.8%	61.5%	61.8%	61.6%	54.5%	$ 294.0	$ 228.3	$ 65.7	$ 2.4	$ 276.3	$ 572.7	39.9%	11.5%	0.4%	48.2%
York Water Company	YORW	55.6%	57.4%	57.0%	57.5%	60.0%	$ 100.7	$ 94.2	$ 6.5	$ -	$ 141.3	$ 242.0	38.9%	2.7%	0.0%	58.4%
SJW Group	SJW	50.2%	49.3%	51.8%	67.3%	63.5%	$ 511.1	$ 511.1	$ -	$ -	$ 889.2	$ 1,400.3	36.5%	0.0%	0.0%	63.5%
Maximum		59.8%	61.5%	62.0%	67.3%	63.5%	$ 9,143.0	$ 8,640.0	$ 503.0	$ 7.0	$ 6,261.6	$ 15,411.6	56.1%	11.5%	0.4%	63.5%
Minimum		46.2%	47.5%	45.3%	43.6%	42.0%	$ 100.7	$ 94.2	$ -	$ -	$ 141.3	$ 242.0	36.5%	0.0%	0.0%	40.6%
Median		55.6%	55.4%	57.0%	57.5%	56.0%	$ 511.1	$ 511.1	$ 65.7	$ -	$ 775.8	$ 1,400.3	41.4%	2.7%	0.0%	56.0%
Average		53.7%	54.8%	54.9%	55.1%	54.6%	$ 2,082.6	$ 1,950.6	$ 132.0	$ 1.3	$ 1,838.6	$ 3,922.5	43.3%	4.2%	0.1%	**52.5%**

Sources:
[A] Value Line: January 10, 2020 Company Reports
[B] Percentage calculated on Total Capital including Short Term Debt.

CAPITAL STRUCTURE WITHOUT SHORT TERM DEBT (JANUARY 2020)
Water Proxy Group

		[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]	[10]	[11]	[12]	[13]	[14]	[15]
		% Common Equity					($ millions)						Percentage			
		2015	2016	2017	2018	2019	Total Debt	LT Debt	ST Debt	Pfd Stock	Equity	Total Capital	LT Debt	ST Debt	Pfd Stock	Equity Ratio
		[A]	[A]	[A]	[A]	[A]	[A]	[A]	[B]	[A]	[A]	[A]	[B]	[B]	[B]	[B]
American States Water	AWR	58.9%	60.6%	62.0%	59.5%	56.0%	$ 475.3	$ 475.0		$ -	$ 604.5	$ 1,079.5	44.0%	0.0%	0.0%	56.0%
American Water Works Co., Ir	AWK	46.2%	47.5%	45.3%	43.6%	42.0%	$ 9,143.0	$ 8,640.0		$ 7.0	$ 6,261.6	$ 14,908.6	58.0%	0.0%	0.0%	42.0%
Essential Utilities (Aqua Ameri	WTRG	49.7%	51.6%	49.4%	45.6%	57.5%	$ 3,086.4	$ 2,898.3		$ -	$ 3,921.2	$ 6,819.5	42.5%	0.0%	0.0%	57.5%
California Water Serv. Grp.	CWT	55.6%	55.4%	57.3%	50.7%	49.0%	$ 967.9	$ 807.5		$ -	$ 775.8	$ 1,583.3	51.0%	0.0%	0.0%	49.0%
Middlesex Water Company	MSEX	59.8%	61.5%	61.8%	61.6%	54.5%	$ 294.0	$ 228.3		$ 2.4	$ 276.3	$ 507.0	45.0%	0.0%	0.5%	54.5%
York Water Company	YORW	55.6%	57.4%	57.0%	57.5%	60.0%	$ 100.7	$ 94.2		$ -	$ 141.3	$ 235.5	40.0%	0.0%	0.0%	60.0%
SJW Group	SJW	50.2%	49.3%	51.8%	67.3%	63.5%	$ 511.1	$ 511.1		$ -	$ 889.2	$ 1,400.3	36.5%	0.0%	0.0%	63.5%
Maximum		59.8%	61.5%	62.0%	67.3%	63.5%	$ 9,143.0	$ 8,640.0		$ 7.0	$ 6,261.6	$ 14,908.6	58.0%	0.0%	0.5%	63.5%
Minimum		46.2%	47.5%	45.3%	43.6%	42.0%	$ 100.7	$ 94.2		$ -	$ 141.3	$ 235.5	36.5%	0.0%	0.0%	42.0%
Median		55.6%	55.4%	57.0%	57.5%	56.0%	$ 511.1	$ 511.1		$ -	$ 775.8	$ 1,400.3	44.0%	0.0%	0.0%	56.0%
Average		53.7%	54.8%	54.9%	55.1%	54.6%	$ 2,082.6	$ 1,950.6		$ 1.3	$ 1,838.6	$ 3,790.5	45.3%	0.0%	0.1%	**54.6%**

Sources:
[A] Value Line: January 10, 2020 Company Reports
[B] Percentage calculated on Total Capital excluding Short Term Debt.

EXHIBIT ALR-7

GDS Associates, Inc.
Engineers and Consultants

The Analysis and Determination of the Value of Donated Assets for Palmetto Utilities Inc.'s Palmetto of Richland County, LLC Service Area

June 5, 2019

Submitted by
GDS Associates, Inc.
919 Congress Ave., Suite 1110
Austin, TX 78701
(512)-494-0369
www.gdsassociates.com

Table of Contents

The Analysis and Determination of the Value of Donated Assets for Palmetto Utilities Inc.'s Palmetto of Richland County, LLC Service Area

Introduction

On March 20, 2013 (the "Acquisition Date"), Palmetto of Richland County, LLC ("PRC") acquired certain sewer system assets (the "PRC Assets") associated with a specific customer territory (the "PRC Territory") from the City of Columbia. On July 13, 2017 (the "Merger Date"), PRC was merged into PUI. In the general rate proceeding filed by PUI in Docket No. 2017-228-S, ORS and PUI entered into a Stipulation which allows issues concerning the valuation of the plant comprising the wastewater collection and transportation system serving customers in the former PRC Territory to be addressed in a future rate proceeding. The Scope of Services is focused on determining the value of donated assets. Our analysis focused on the following tasks as specified in our response to the ORS RFP:

Task 1: The identification and determinization of the value of the assets donated to the City that were sold to PRC;

Task 2: Review the PRC-City transaction and related books and records for conformity with National Association of Regulatory Utility Commissioners (NARUC) accounting Standards;

Task 3: Review any supporting records, documents and a valuation study prepared for Palmetto Utilities, Inc. (PUI); and

Task 4: Identify and confirm the accuracy of PUI accounting records related to the post acquisition of donated plant and extensions as well as pre and post-acquisition tap and expansion fees.

This report will first discuss contributions in aid of construction (CIAC or donated plant) under NARUC and GASB (the Government Accounting Standards Board), provide background of the transaction resulting in the transfer of the donated plant, the results of our investigation, and provide an observation of the transaction and lastly recommendations to consider for PUI's upcoming rate case.

We would like to express our sincere gratitude to the ORS for the assistance provided in gathering the data needed to conduct our analysis. We greatly appreciate their efforts which were essential to the successful completion of this project.

Donated Plant (CIAC) Rules Under NARUC and GASB

Before we address the applicable issues in this report, it is important to understand the differences in the accounting treatment of donated plant, or CIAC, under NARUC, which governs regulatory accounting for investor owned utilities (IOU), and GASB which establishes accounting standards for financial reporting and assessment to governmental organizations.

The National Association of Regulatory Utility Commissioners' Uniform System of Accounts for Class A Wastewater Utilities, 1996, provides the well-recognized definition of "Contributions In Aid Of Construction":

> Any amount or item of money, services or property received by a utility, from any person or governmental agency, any portion of which is provided at no cost to the utility, which represents an addition or transfer to the capital of the utility, and which is utilized to offset the acquisition, improvement or construction costs of the utility's property, facilities, or equipment used to provide utility services to the public at page 2.

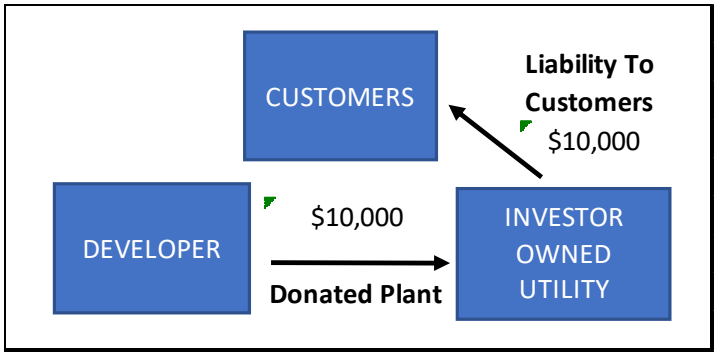
There are typically two kinds of contributions, developer and customer. Developers typically donate plant or provide large sums of money for utility service while a customer will pay for the connection or main extension to their service location.

NARUC Accounting

Under NARUC any time a utility or IOU receives assets that it does not pay for (cost free capital), the IOU typically cannot recover the value of those assets in rate base. Said another way, customer and/or developer CIAC is excluded from the rate base because the utility should not earn a return on cost free capital. NARUC requires the IOU to record the donated plant values at cost and with an offsetting amount to a liability. The donated plant value and the offsetting liability are accounted for in rate base. Since they offset one another the net value is zero, the utility does not recover the cost of contributed plant.

Another fundamental principle of ratemaking is that utility property is typically valued based on when utility property is first devoted to public service. Thus, if the IOU is sold to another IOU, NARUC requires, absent of a statute stating otherwise, that the CIAC liability to be maintained on the acquiring IOU's books. The CIAC liability follows the donated plant regardless which party owns the IOU. It is also important to note that NARUC requires the depreciation of the asset and the amortization of the associated CIAC to be uniform, so both the asset and the liability are retired together at the time the donated plant is retired from service. Diagram 1 below shows the three-party relationship of CIAC required by NARUC.

Diagram 1
CIAC Under NARUC

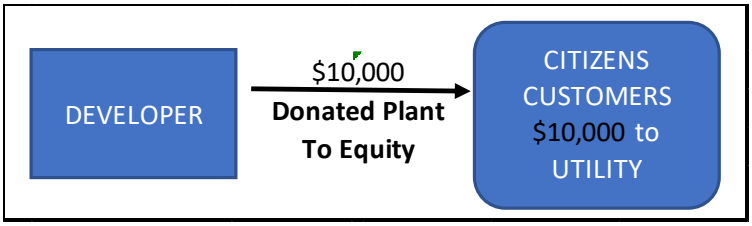


Customer Liability is Maintained Under IOU to IOU Acquisition

GASB Accounting

Under GASB donated or contributed plant is treated differently than under NARUC. GASB does not allow the Municipality to record a liability to itself or in this case CIAC. This is because the Municipality owns the utility and the customers are typically citizens or a form of owner of the utility. When a municipal or non-profit utility receives donated plant or contributions in which the value was known they credit equity rather than a liability. In other words, the donated or contributed plant becomes unencumbered assets owned by the municipal utility. If the donated plant value is not known no entry or recognition of the donation will be recorded. GASB 33 and 34 require all plant donations and contributions to be recorded as equity. GASB has one exception to this rule and that is if the Municipal Utility is regulated by the state, then the state regulations will impact accounting and whether they are required to follow NARUC. Diagram 2 below shows the two-party relationship of CIAC under GASB.

Diagram 2
CIAC Under GASB



Customer Liability (or CIAC) is Not Allowed

This GASB accounting requirement explains why PRC was not able to identify the donated plant on the City's books. The next section goes into the background of the transaction that resulted

in this Report. The PRC acquisition is somewhat unique in that it involves both NARUC and GASB accounting rules.

Background of the Donated Plant (CIAC)

The Transaction and PSC Approval

The parent company of PUI formed PRC to purchase certain wastewater collection system assets owned by the City of Columbia which served approximately 11,230 customers in an area adjacent to the Palmetto service area and outside the City's corporate limits. At the time of the asset purchase, the City of Columbia sewer system was one of the largest in the state and was under an EPA consent decree that imposed a timeline to make significant and costly upgrades to its wastewater treatment plants over an extended period.

On June 6, 2012 PRC and the City entered into an Asset Purchase Agreement (APA). On July 6, 2012 PRC filed an application before the Public Service Commission of South Carolina (PSC) requesting a finding that the acquisition was in the public interest and establishing a service area and rates and charges. PRC stated that it would maintain the City's existing rates and within three years move the newly acquired customers off the City's treatment plant to PRC's newly upgraded treatment plant. PRC stated that moving the customers off City treatment to PRC treatment would result in more realizable efficiencies to the customers. Also, PRC argued that the purchase was in the public interest because the City's customers were all located outside the City's corporate limits and they had no control or recourse regarding the rates the City charged. Under PRC ownership, the customers will benefit from PSC regulation which will represent their interests.

The Commission approved the acquisition on December 21, 2012. The Order for the approval can be found Docket No. 2012-273-S, Order No. 2012-960. Ordering paragraph 4 addressed post-acquisition rates:

> PRC will continue to charge the affected customers the same monthly service rates and connection charges now imposed by the City unless and until such time as PRC receives approval from the Commission for an adjustment of such charges in a proceeding brought under S.C. Code Ann. 58-5-240 (Supp. 2011) (p.6)

Of particular importance to the subject matter at hand is that the PSC made no finding in its Order as to PRC's cost of service or as to the cost of service of the acquired system and made no commitment that the purchase price would be recoverable in future rates.

The APA provided for the reimbursement of "connection fees" (extension and tap fees or CIAC) collected by the City during the period between the date the APA was signed and after PSC

approval and the closing.[1] In addition, the APA allows both parties access or the ability to make copies of records and documents "solely related to the Assets or the City System" for a period of six years after the closing date,[2] which has now expired.

PUI Rate Case and the Issue of Donated Plant

As discussed above, on July 13, 2017 PRC was merged into PUI[3]. On August 31, 2017 PUI filed a rate increase request to consolidate the PRC and PUI rates in which the rate base included the sewer collection assets acquired from the City of Columbia[4]. The rate request included the consolidation of PRC rates, which were formally the City's rates, with PUI's existing rates. Except for the previously mentioned connection fees provided during the closing, PUI did not recognize any CIAC associated with assets acquired from the City. PUI relied upon an original cost study to value these assets because "the information [received from the City] in general was not very usable."[5]

NARUC allows for estimates of original cost values when there are no records or cost documentation available. Original costs studies are typically used to estimate acquired plant original cost values. However, in the rate proceeding the ORS did not agree with PUI's recording of the PRC assets. Mr. Willie Morgan's Direct Testimony summarizes the ORS's conclusion as follows:

> ORS does not dispute the Company's use of an estimate for the original cost of plant. However, the Company did not determine and record the utility assets that were originally contributed to the City of Columbia by developers or home builders. ORS is aware that many of the utility assets associated with pipeline and taps in the former PRC service territory were donated to the City of Columbia after construction by developers or individual builders.

Mr. Morgan's testimony goes on to state:

> To support ORS's position that the utility assets acquired from the City of Columbia may have been contributed, Exhibit WJM-I includes copies of eight (8) deeds filed by PRC in its Application to establish service territory and rates filed in Docket No. 2012-273-S. These documents demonstrate the City of Columbia received donations of utility assets from builders such as Centex Homes, Fairways Development General Partnership, The Mungo Company, Richland County, Brickyard-Longtown, LLC, North Crossing, Inc., and Pine Springs, Inc. It does not

[1] Section V – Agreements Through Closing part 5.1(h) of the Asset Purchase Agreement

[2] Section IX – Covenants After Closing part 9.1 Records and Documents of the Asset Purchase Agreement

[3] 2017-105-S;Joint Application of Palmetto of Richland County, LLC and Palmetto Utilities, Incorporated for Approval of Merger (Ref: Ni Pacolet Milliken Utilities, LLC)

[4] See Docket No. 2017-228-S.

[5] PUI response to ORS Request No. 2, question 2.

appear the City of Columbia paid more than one dollar for many of the utility assets that it sold to PRC.[6]

Analysis Results

As indicated in the Introduction of this report, our analysis focused on four primary tasks. We will address each task as listed above and the results of our investigation.

Task 1: The identification and determinization of the value of the assets donated to the City that were sold to PRC

We requested and obtained the accounting entry that was made by the City to record the sale of the collection system to PRC. From the accounting entry, we surmised that all but about $1.29 million of the net plant purchased was either donated or contributed to the City. Therefore, we estimate that $16.71 million of the $18 million purchase price is most likely donated. This amount is derived by taking the PUI Original Cost Study (OCS) [7]value of $18 million for the total plant purchased and deducting the $1.29 million of plant book values known to be non-contributed. We believe the reason the City did not have book values for the $16.71 million in plant is that it was most likely donated through the transfer of deeds from developers to the City[8].

As discussed above, PRC indicated that most of the information provided by the City was not very usable. Thus, assuming the PUI OCS value of $18 million is correct, the City's accounting entry valuing and identifying (or listing) the non-contributed plant (or the plant purchased/built and booked by the City) we believe about $16.71 million could be considered as donated and/or contributed property. This includes $14.34 million of plant valued in the original cost study that does not have any documentation or values assigned by the City. Of course, this assumes the plant values provided in the City's accounting entry match the values in the Original Cost Study which is highly unlikely. We could not locate and match the plant identified in the City's entry to the items listed in the OCS values addressed later in this report.

Task 2: Review the PRC-City transaction for conformity with National Association of Regulatory Utility Commissioners (NARUC) accounting Standards

It should be noted that typically NARUC rules are only applied to for-profit IOUs in as much as NARUC is composed primarily of regulatory commissioners throughout the country, the rules are "recommended to the Commissions represented by the membership of this Association", (unnumbered page after the cover page), and the rules repeatedly refer to "Commissions"

[6] Docket No. 2017-228-S, Palmetto Utilities, Inc., Direct Testimony of Mr. Willie Morgan P.E. page 6, lines 6-20
[7] ORS Request #2, 2019-02-28, No. 4
[8] The City's accounting entry indicates a gain of $13.4 million however, the entry excludes the $1.3 million "Escrow Holdback Amount" required by the Asset Purchase Agreement, for a total purchase price of $18 million, deposited before the final closing.

A review of PRC or PUI's accounting entry indicates it complies with NARUC assuming: 1) there is no donated plant; and 2) the original cost study has been accepted by the Commission. However, as we discussed in Task 1 above we believe there is more donated plant than the amounts received for just tap and extension fees. Also, as discussed in Task 3 below, we believe the original cost study over values the net plant by about $2.60 million or the total net plant purchased should have an original cost closer to $15.4 million rather than the $18 million proposed by PUI. However, the accounting entry below assumes the OCS value of $18 million, a CIAC value of $16.71 and an Acquisition Adjustment of $16.71 million[9]. The accounting entries according to NARUC are summarized[10] in Diagram 3 below.

Diagram 3
Summary Accounting Entries Per NARUC
(In Millions)

	DR	CR
Net Plant	$18.00	
Acquisition Adjustment	$16.71	
Net CIAC		$16.71
Cash and/or Debt		$18.00
	34.71	**34.71**

It should be noted that this entry assumes that all the plant donated to the City should be recognized as CIAC.

Task 3: Review any supporting records, documents and a valuation study prepared for PUI

We reviewed the continuing property records (CPR) provided on Excel spreadsheets provided by ORS for the PRC plant. The CPR records included the values determined by the OCS conducted to value the assets purchased from the City. In addition, the ORS provided supporting plant documentation and invoices used in preparing the replacement cost new study which is the starting point of the OCS. The CPR data provided appeared to be in order and in compliance with NARUC standards with one exception regarding the tap and extension fees discussed below in Task 4.

Before we discuss our review of the PUI OCS, it is important to understand what constitutes an OCS. An OCS is an accepted computational process using reliable and accepted procedures, used to determine original cost and accumulated depreciation absent reliable records. The resulting

[9] Purchase Price of $18 million less the book value of $1.29 million of net plant purchased/built by the City or non-CIAC plant.

[10] NARUC requires these entries to be made in the greatest detail available which includes accumulated depreciation, accumulated CIAC amortization, etc. See NARUC Accounting Instruction No. 21.

reliable values of the various utility plant items reflect the different "in service" dates which are reasonable proxies for the original cost values. If the value of an item is known at any point in time, trending indices can be used to estimate its value at any other point in time. An OCS begins with the replacement cost of each plant item at a point in time. The next step is to apply industry accepted trending indices to the time the item was first installed or began providing utility service. The computed index factor is then applied to the replacement cost value of a plant item to derive a value at the time of installation. This value is used as a proxy or substitute for original cost.

As discussed above, an OCS is made when original cost plant records are non-existent or unreliable. The best and most reliable index to use in an OCS is the Handy-Whitman Index because utility regulators and the industry routinely accept it. Whitman, Requardt, and Associates from Baltimore, Maryland prepare the Handy-Whitman Index for six different geographical regions of the United States and has been reporting annual values since 1912 and bi-annual values for each year since 1973. Access to the Handy-Whitman Index is through a copyrighted subscription service available at: www.wrallp.com/about-us/handy-whitman-index

We have concerns with the OCS primarily because it applies CPI indices that are applicable to non-utility costs rather than industry acceptable Handy Whitman Indices (HWI) specific to utilities. As discussed in Task 2 above we applied the HWI and computed a net plant original cost values of around $15.6 million or about $2.6 million lower than the value determined in the PUI OCS.

Task 4: Identify and confirm the accuracy of PUI accounting records related to the post acquisition of donated plant and extensions as well as pre and post-acquisition tap and expansion fees.

We reviewed the post-acquisition backup of numerous non-cash plant donations and their recording in the Company's CPR for the years 2013 through the first quarter of 2017. With exception to extension fee contracts the accuracy of the accounting treatment recording the non-cash donated plant appears to be correct and in conformity with NARUC. We could not locate references or values of the extension fee contracts to the CPR.

As we discussed earlier, we obtained the accounting entry made by the City to record the sale of the PRC plant. The accounting entry included backup that detailed $333,460 in tap and extension fees collected from customers from the date the APA was signed until PSC approval and the closing. A review of the accounting entries made by PUI to record the asset purchase correctly recorded the $333,460 to CIAC.

However, after the 2013 closing, tap and expansion fees were booked to revenues this is generally acceptable for taps, but inappropriate for expansion fees. The City Tariff adopted by PUI for the PRC service territory and authorized by the Commission specifically states, "In addition to the sewer service connection charge" (i.e. Tap Fee), "a plant expansion fee must be

paid at the time application for service is made". The additional expansion fee of $2,640 is not a tap fee and should not be recorded as revenue. The tariff explains the expansion fee is "to offset the cost of constructing ***increased capacity or capital expenditures"*** (emphasis added). Clearly cash payments made by customers to fund plant capacity additions are defined by NARUC as CIAC not tap fee revenues. Diagram 4 below Summarizes the Expansion Fees billed by PUI for the period starting the month after the closing or 4/2013 through the last PUI rate case or 8/2017.

Diagram 4
Summary of Connection Fees Billed 4/2013-8/2017

	No. of Connections Made	Expansion Fee Charged & Booked	Treatment Plant CIAC
Known Expansion Fees			
Post Closing 4/2013 - 12/2013	95	$2,640	$250,800
2014	159	$2,640	$419,760
2015	121	$2,640	$319,440
2016	184	$2,640	$485,760
1/2017 - 8/2017	136	$2,640	$359,040
Total			$1,834,800
Expansion Fees Unknown			
7/2013 Sparkle Car Wash			$30,576
3/2012 Clemson Road Assisted Living			$100,328
4/2017 Columbia IL Investors LLC			$115,454

In addition, there were three amounts charged to revenue in which the expansion fee charges could not be determined as detailed in Diagram 4 above.

Observation

The circumstances of this type of transaction are becoming increasingly common throughout the United States. Many municipalities are experiencing difficulties operating and maintaining the infrastructure of their systems. As a result, many have sold their systems to private operators. In fact, several states have adopted legislation that allows IOUs to recover through rates the fair market value for acquired municipal water systems.

California's fair value statute is a good example. It is limited to consolidations of water utilities. Nevertheless, the California model could be easily applied to wastewater. California's Public Water System Investment and Consolidation Act of 1997 itemizes the challenges that consolidations of systems can solve:

- Public water systems are faced with the need to replace or upgrade the public water system infrastructure to meet increasingly stringent state and federal safe drinking water laws and regulations governing fire flow standards for public fire protection.

- Increasing amounts of capital are required to finance the necessary investment in public water system infrastructure.

- Scale economies are achievable in the operation of public water systems.

- Providing water corporations with an incentive to achieve these scale economies will provide benefits to ratepayers.

The California commission is required to use the standard of fair market value when establishing the rate base value for the distribution system of a public water system acquired by a water corporation. If the fair market value exceeds reproduction cost, the commission would be permitted to include the difference in the rate base for rate setting purposes if it finds that the additional amounts are fair and reasonable.[11]

Similar legislation exists in Missouri, Illinois, Indiana, Pennsylvania and New Jersey. Texas recently passed fair value legislation relating to water utilities.

Recommendations

It is our understanding that PUI is planning to file a rate request after this report has been issued. Thus, our recommendations focus on what issues should be addressed in the upcoming case.

Recommendation 1: All expansion fees charged to revenues since the acquisition of PRC should be recorded as CIAC, otherwise PUI should provide evidence to support why their methodology is reasonable. Also, provide support demonstrating how extension contracts are booked to "cash CIAC".

As observed in our discussion in Task 4 above, expansion fees clearly relate to the offsetting of capital costs to maintain and/or expand treatment plant capacity. Thus, these fees should be recorded as CIAC and amortized over the life of the sewer treatment plant. PUI has recorded almost $2 million of these fees to revenues while offsetting capital costs have been booked to the recently built sewer treatment plant. The expansion fees ultimately ended up in PUI's equity account. Thus, the next rate case filed by PUI should clearly show an adjustment moving all expansion fees booked to revenues from equity to CIAC. Otherwise, PUI should provide proof

[11] California Public Utilities Code, Section 2718

why booking expansion fees to revenue is appropriate. In addition, a method for tracking extension contract expenditures should be developed and demonstrated.

Recommendation 2: Amend the Original Cost Study. The Original Cost Study should be amended to: **a.** Reflect the book values detailed in the city's accounting entry. **b**. Replace computed trended values with plant replacements since the last rate filing. **c.** Apply Handy-Whitman Indices to the remaining RCN plant values.

This will allow PUI to update its OCS to reflect known original cost values, new investment and apply the appropriate industry accepted indices to compute a reasonable estimate for original cost attributed to the City assets.

Recommendation 3: PRC Donated Plant in Rate Base

Given the circumstances of PUI's last rate case, the ORS made the correct decision to follow case law and exclude the donated plant purchased by PRC. However, PUI did not have an opportunity to defend why the donated plant should be included in rate base whether from a rate making perspective or public interest perspective.

It is important for all parties to understand the significance of the Commission's decision on this matter. It will have a direct impact on future IOU acquisitions of municipal utilities. As discussed earlier, municipal utilities across the country are increasingly privatizing their water and sewer utilities and the circumstance surrounding this case should be carefully examined. Toward that end, the following questions need to be answered to assist the Commission in making a reasonable decision.

- *Should the City's accounting treatment override the rate making practice of removing of donated plant from rate base prevalent in the Public Service Commission of South Carolina case law?*
- *Does the exclusion of donated plant unfairly apply NARUC principles retroactively?*
- *Is it cost free capital if PUI paid for unencumbered assets legally owned by the City?*
- *Would including the donated plant in rate base result in the customers paying twice?*
- *What is the financial impact on PUI of not allowing the donated plant in rate base and is it in the public interest?*
- *Regarding the public interest; Did the PUI purchase help ease the cost and burden of the EPA consent decree on the City? If so, can it be quantified?*
- *How should the Commission's decision impact future acquisitions between IOUs and municipalities?*

In addition to the above questions, all parties should consider a reasonable solution that does not create a future disincentive for IOU's to purchase municipal assets. One such solution maybe to allow PUI recovery only of the donated plant in rates. In other words, a return ***of*** *but* not ***on***.

This could be achieved by excluding the negative amortization of the CIAC (used to offset depreciation) from the revenue requirement calculation. There are some states that allow the exclusion of negative amortization to recognize that the donated plant will ultimately need to be replaced by the IOU. In addition, the exclusion of negative amortization helps to reduce rate shock and increase cash flow, which is important for servicing debt and plant replacements.

Conclusion

We conclude that PUI is recording non-cash donated plant accurately and in accordance with NARUC. This report addresses the misapplication of almost $2 million in CIAC receipts as revenue and recommends a closer review and analysis of the booking of extension contract costs. The OCS presented by PUI in support of the PRC plant values should be updated to reflect the known values reflected in the information by the City during our analysis. Also, the OCS should be updated to reflect utility appropriate indices, plant retirements and additions made through the test year of its next rate case. Our analysis indicates that the clear majority of the PRC plant purchased by PUI from the City was donated by developers. This finding should be addressed by PUI in their upcoming rate case by supporting the reasonableness of recovering the original cost values of the PRC donated plant in rates or thru some other reasonable alternative rate methodology. Most importantly, great care should be taken when litigating this issue since the Commission's final decision has the potential to lay the ground work for any future cases similar in nature and/or legislation that may be needed to advance the public interest.